

Title (en)  
APPARATUS AND METHOD FOR EXTRAPULMONARY BLOOD GAS EXCHANGE

Publication  
**EP 0430953 A4 19910807 (EN)**

Application  
**EP 89907408 A 19890501**

Priority  
• US 8901846 W 19890501  
• US 20411588 A 19880608

Abstract (en)  
[origin: US4850958A] An in vivo extrapulmonary blood gas exchange device having a bundle comprised of a plurality of elongated gas permeable tubes being bound at each end and enclosed within a respective air tight proximal and distal chamber. A dual lumen tube having an outer lumen and an inner lumen is situated relative to the gas permeable tubes such that the outer lumen terminates within the proximal chamber and such that the inner lumen terminates within the distal chamber. The apparatus includes means for selectively adjusting the overall, outside diameter of the bundle of gas permeable tubes to provide either a furled, small insertion diameter when inserting the apparatus into the venae cavae of a patient or an unfurled, expanded oxygenation diameter after the apparatus is in place within the venae cavae and the bundle of gas permeable tubes is deployed therein. The apparatus is inserted into the patient through a single incision at one of the right external iliac, common femoral or internal jugular veins. A plurality of crimps along the length of the gas permeable tubes maintain the tubes in a spaced relation one from another such that blood surface contact with the gas permeable tubes is maximized, disturbed flow of blood over the tubes is achieved and laminar blood flow between and around the gas permeable tubes is inhibited.

IPC 1-7  
**A61M 5/00**

IPC 8 full level  
**A61M 1/14** (2006.01); **A61M 1/16** (2006.01); **A61M 1/18** (2006.01); **A61M 1/36** (2006.01)

CPC (source: EP US)  
**A61M 1/1678** (2013.01 - EP US); **A61M 1/3673** (2014.02 - EP US); **A61M 1/1698** (2013.01 - EP US)

Citation (search report)  
• US 4631053 A 19861223 - TAHERI SYDE A [US]  
• FR 2398507 A1 19790223 - FRESENIUS CHEM PHARM IND [DE]

Designated contracting state (EPC)  
AT BE CH DE FR GB IT LI LU NL SE

DOCDB simple family (publication)  
**US 4850958 A 19890725**; AT E110968 T1 19940915; AU 3771289 A 19900105; AU 631366 B2 19921126; CA 1318560 C 19930601; DE 68918104 D1 19941013; DE 68918104 T2 19950511; EP 0430953 A1 19910612; EP 0430953 A4 19910807; EP 0430953 B1 19940907; JP H03500134 A 19910117; JP H0543389 B2 19930701; JP H07155370 A 19950620; WO 8911884 A1 19891214

DOCDB simple family (application)  
**US 20411588 A 19880608**; AT 89907408 T 19890501; AU 3771289 A 19890501; CA 598525 A 19890502; DE 68918104 T 19890501; EP 89907408 A 19890501; JP 15475794 A 19940706; JP 50679889 A 19890501; US 8901846 W 19890501